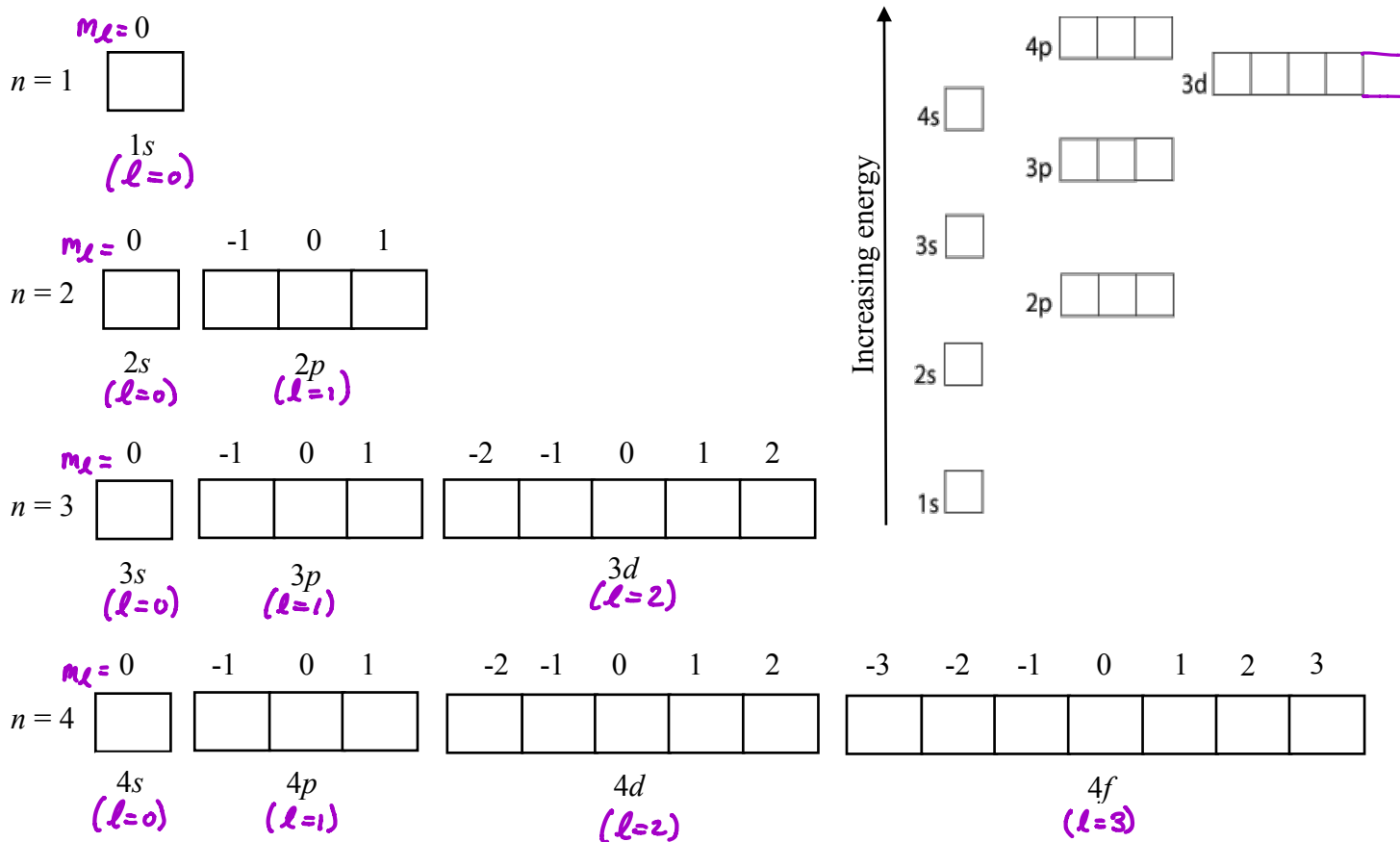


## Activity Sheet: Electron Restaurant

You are the proud new owner of a restaurant for very special consumers: electrons! Your restaurant has  $n$  floors, each one containing or more of the following types of tables  $s$ ,  $p$ ,  $d$ , and  $f$ . The layouts of the first 4 levels of your restaurant are as follows, alongside which there is a diagram that illustrates how much energy it takes to maintain each floor.



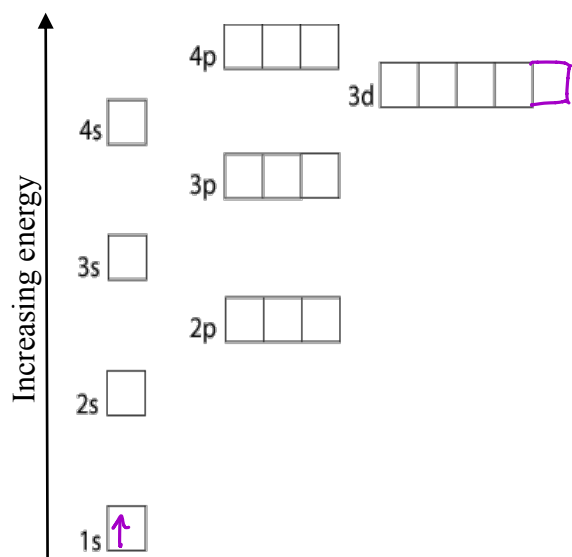
Before the opening day, you establish certain rules that will allow you to keep the electrons happy:

1. You want to try and limit the number of floors and tables you need to maintain.
2. You want each electron to be at their table by themselves for as long as possible.
3. In the event that you need to have two electrons sitting at the same table, both need to be of opposite spins.

Finally, make sure that at the end of the day you log the seating arrangements.

## Daily Log

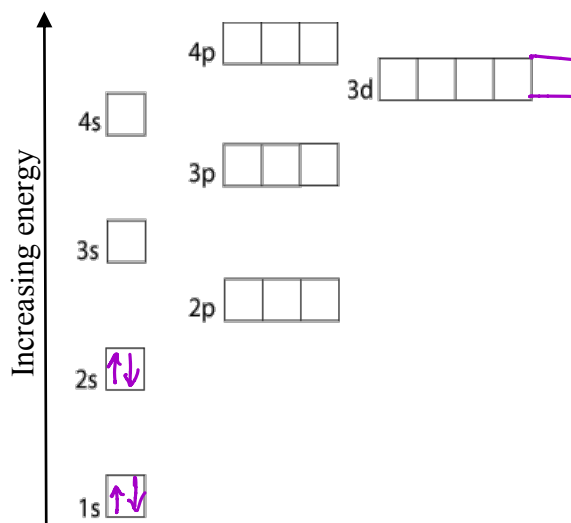
Day 1

 $1e^-$ 

Seating arrangement:

 $1s^1$ 

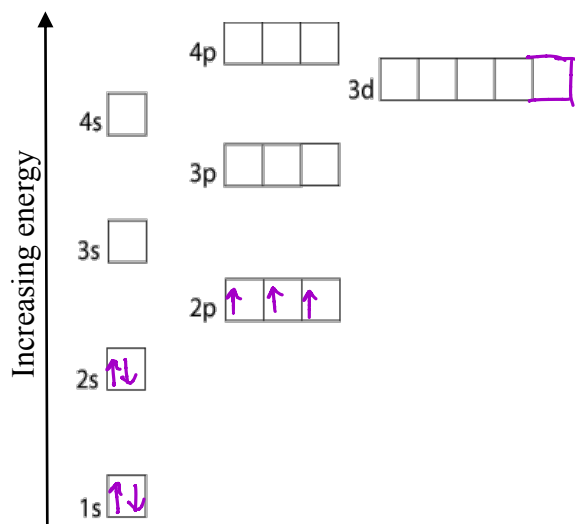
Day 2

 $4e^-$ 

Seating arrangement:

 $1s^2 2s^2$ 

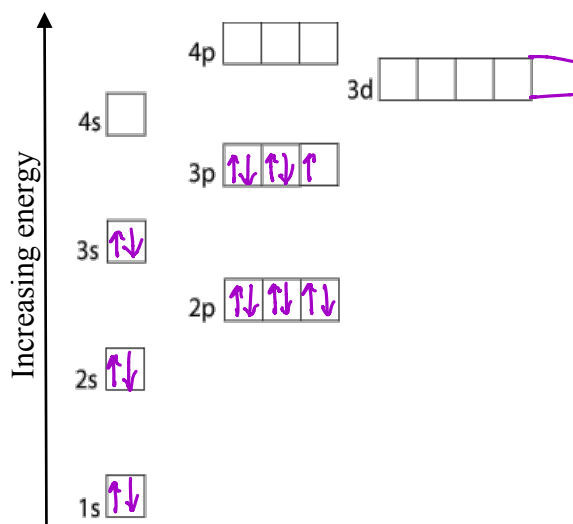
Day 3

 $7e^-$ 

Seating arrangement:

 $1s^2 2s^2 2p^3$ 

Day 4

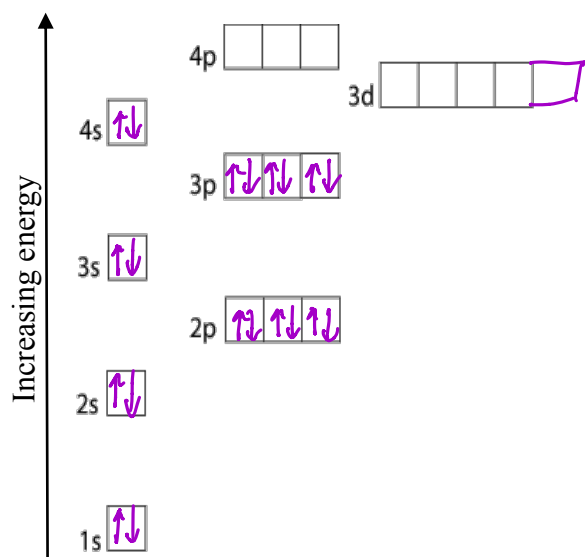
 $17e^-$ 

Seating arrangement:

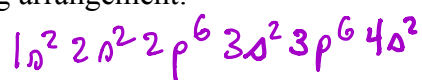
 $1s^2 2s^2 2p^6 3s^2 3p^5$

## Daily Log

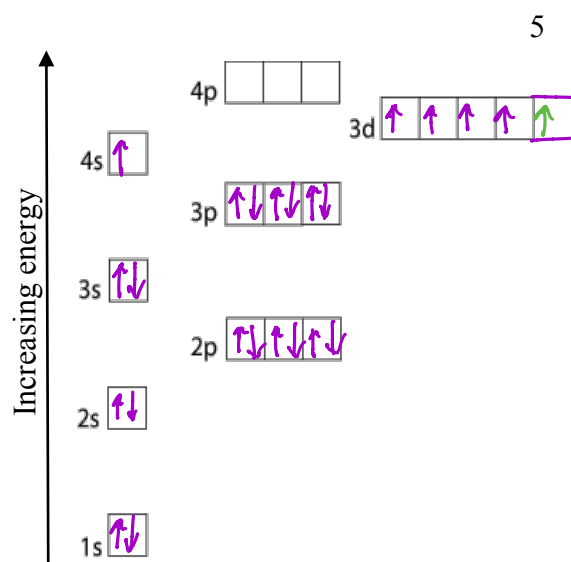
Day 5

 $20e^-$ 

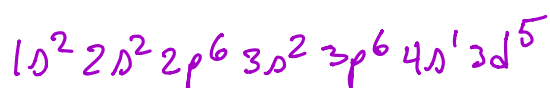
Seating arrangement:



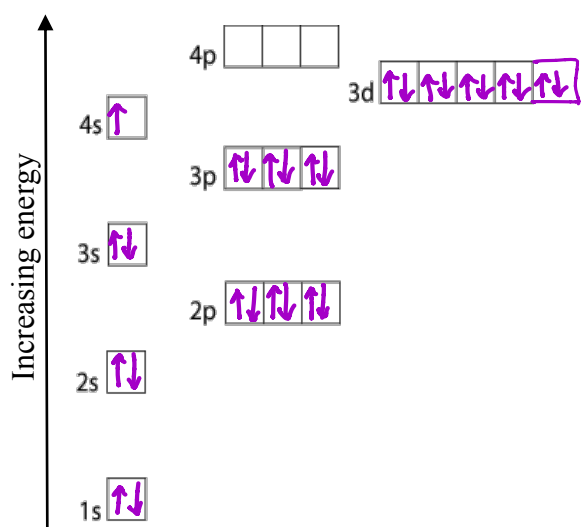
Day 6

 $24e^-$ 

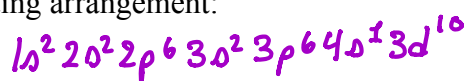
Seating arrangement:



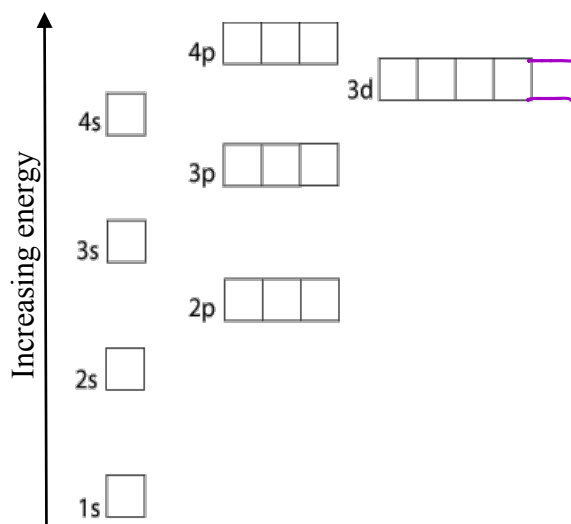
Day 7

 $29e^-$ 

Seating arrangement:



Day 8



Seating arrangement: